

CLAIM AMENDMENTS

1. (Currently Amended) A method of improving a design of an electronic circuit, comprising:  
generating an electronic design;  
specifying one or more pipeline locations of the electronic design; and  
~~modifying~~ automatically modifying a number of clocked elements in the one or more  
pipeline locations of the design; ~~and~~  
~~communicating a result of modifying to a user.~~

2. (Currently Amended) The method of claim 1, further comprising:  
organizing signals in the electronic design into groups; and  
specifying rules for pipelining each signal group.

3-5. (Cancelled)

6. (Currently Amended) The method of claim 5, wherein ~~automatically changing comprises:~~  
~~determining if changing the number of~~ the clocked elements increases a parameter modification is  
based on a predicted effect that the clocked element modification has on one or more parameters of  
the design.

7. (Currently Amended) The method of claim 5, ~~wherein automatically changing comprises:~~  
further comprising determining one or more placement locations for one or more of the clocked  
elements.

8-11 (Cancelled)

12. (Currently Amended) An apparatus for improving a design of an electronic circuit  
comprising:

means for generating an electronic design;

means for specifying one or more pipeline locations of the electronic design; and

means for ~~modifying~~ automatically modifying a number of clocked elements in the one or  
more pipeline locations of the design; and

~~means for communicating a result of modifying to a user.~~

13. (Currently Amended) The apparatus of claim 12, further comprising:

means for organizing signals in the electronic design into groups; and

means for specifying rules for pipelining each signal group.

14-16. (Cancelled)

17. (Currently Amended) The apparatus of claim 16, wherein ~~said means for automatically~~  
~~changing comprises: means for determining if changing the number of the~~ clocked elements  
~~increases a parameter~~ modification is based on an predicted effect that the clocked element  
modification has on one or more parameters of the design.

18. (Currently Amended) The apparatus of claim 16, ~~wherein said means for automatically~~  
~~changing comprises: further comprising~~ means for determining one or more placement locations for  
one or more of the clocked elements.

19-22. (Cancelled).

23. (Currently Amended) An article of manufacture comprising a computer readable medium  
storing a computer software program which, when executed by a computer processing system,  
causes the system to perform a method of improving a design of an electronic circuit, the method  
comprising:

generating an electronic design;

specifying receiving one or more specified pipeline locations of the electronic design; and

~~modifying~~ automatically modifying a number of clocked elements in the one or more  
pipeline locations of the design; and

~~communicating a result of modifying to a user.~~

24. (Currently Amended) The article of manufacture of claim 23, wherein the ~~program, when executed, causes the system to perform the method further comprising~~ method further comprises:

organizing signals in the electronic design into groups; and

specifying rules for pipelining each signal group.

25-27. (Cancelled)

28. (Currently Amended) The article of manufacture of claim 27, wherein the ~~program, when executed, causes the system to perform said automatically changing, wherein said automatically changing comprises: determining if changing the number of clocked elements increases a parameter~~ modification is based on an effect that the clocked element modification has on one or more parameters of the design.

29. The article of manufacture of claim 27, wherein the ~~program, when executed, causes the system to perform said automatically changing, wherein said automatically changing comprises:~~ method further comprises determining one or more placement locations for one or more of the clocked elements.

30-33. (Cancelled)

34. (New) The method of claim 1, wherein the design comprises a central processing unit (CPU) in which the one or more pipeline locations are specified.

35. (New) The method of claim 1, wherein the one or more pipeline locations are manually specified.

36. (New) The method of claim 1, wherein the one or more pipeline locations are automatically specified.

37. (New) The method of claim 1, wherein the clocked elements comprise flip-flops.

38. (New) The method of claim 1, wherein the clock element modification comprises inserting at least one clock element at the one or more pipeline locations.

39. (New) The method of claim 6, wherein the one or more parameters comprises an operating frequency and an efficiency per cycle.

40. (New) The method of claim 6, further comprising examining the effects on the one or more parameters, wherein the clock element modification and parameter effect examination is iteratively performed.

41. (New) The method of claim 7, further comprising examining effects of the clock element modification and placement location as a mixed programming problem.

42. (New) The apparatus of claim 12, wherein the design comprises a central processing unit (CPU) in which the one or more pipeline locations are specified.

43. (New) The apparatus of claim 12, wherein the clock element modification means comprises a computer processor.

44. (New) The apparatus of claim 12, wherein the clocked elements comprise flip-flops.

45. (New) The apparatus of claim 12, wherein the clock element modification comprises means for inserting at least one clock element at the one or more pipeline locations.

46. (New) The apparatus of claim 17, wherein the one or more parameters comprises an operating frequency and an efficiency per cycle.

47. (New) The apparatus of claim 17, further comprising means for examining the effects on the one or more parameters, wherein the clock element modification and parameter effect examination is iteratively performed.

48. (New) The apparatus of claim 18, wherein the clocked element modification means and placement location means comprise the same device.

49. (New) The apparatus of claim 18, further comprising means for examining effects of the clock element modification and placement location as a mixed programming problem.

50. (New) The article of manufacture of claim 23, wherein the design comprises a central processing unit (CPU) in which the one or more pipeline locations are specified.

51. (New) The article of manufacture of claim 23, further comprising an input for receiving the one or more pipeline locations input by a user.

52. (New) The article of manufacture of claim 23, wherein the method further comprises specifying the one or more pipeline locations.

53. (New) The article of manufacture of claim 23, wherein the clocked elements comprise flip-flops.

54. (New) The article of manufacture of claim 23, wherein the clock element modification comprises inserting at least one clock element at the one or more pipeline locations.

55. (New) The article of manufacture of claim 28, wherein the one or more parameters comprises an operating frequency and an efficiency per cycle.

56. (New) The article of manufacture of claim 28, wherein the method further comprises examining the effects on the one or more parameters, wherein the clock element modification and parameter effect examination is iteratively performed.

57. (New) The article of manufacture of claim 29, wherein the method further comprises examining effects of the clock element modification and placement location as a mixed programming problem.